

# IT Security

## Information & Network Security

by Philipp Bandow

original slides by Bjoern Kimminich

# Philipp Bandow

- Master Student IT-Security at [FH Wedel](#)
- B. Sc. Computer Engineering from [UAS Hamburg](#)
- Lecturer at [Nordakademie](#) since 2021
- Working student in DevSecOps

# Contact Information

## Email

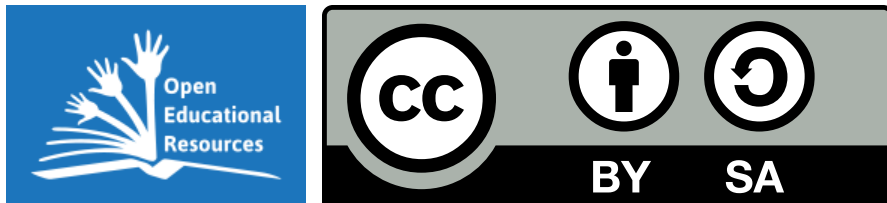
- [phlipp-alexander-moritz.bandow@nordakademie.de](mailto:phlipp-alexander-moritz.bandow@nordakademie.de)

## Miscellaneous




- Threema: [AS7PA49H](#)
- Keybase: [philban](#)
- Github: <https://github.com/philband>



# Course Material

<https://github.com/philband/it-security-lecture>



# Course Material

- All slides and references are in  language
- The lecture can be held in  or  language
- Latest course material is available only on GitHub
- Content exists as `Markdown` files for use with [Marp](#)
- Slides can be [downloaded as PDF](#) from GitHub
- All slides are published as [OER](#) under [CC BY-SA 4.0](#) license

*You can help save a  by not  all slides for the entire course in advance as content might change during the course!*

# Rules

- Presence at lectures is mandatory and will be logged
- Exercises are mandatory (unless explicitly marked as *optional*)
- Exercises marked with
  - "🤝" are done in small work groups
  - "📌" are usually done as a group using whiteboard, flipcharts or brown-paper or a dedicated [Spitfire](#) virtual whiteboard
  - "📝" have a (digitally) written outcome per student or work group
  - "🏠" are homework and must be completed until the next lecture
- Active participation and questions are encouraged at all times
- If you are done early with the last exercise of the day, you may leave

# Curriculum 1st Semester

1. Motivation
2. Security Goals
3. Malware
4. Network Security
5. Encryption
6. Security Management & Organization
7. Presentations of all Encryption work groups
8. Threat Modeling
9. Penetration Testing

# Curriculum 2nd Semester


1. [Open Web Application Security Project \(OWASP\)](#)
2. [XSS](#)
3. [Injection](#)
4. [Authentication Flaws](#)
5. [Authorization Flaws](#)
6. [Sensitive Data](#)
7. [Insecure Dependencies & Configuration](#)
8. [XXE & Deserialization](#)
9. [Secure Development Lifecycle](#)



# Schedule

- Tuesdays, 16:15 - 18:45
- 10 lectures (18.10. - 20.12.20)
- 100% online lecture
  - There will be 1-3 lectures on site in Elmshorn

## Test Exam

- At the end of 2nd semester (90min)
-  Covers topics from both semesters

# Recommended Resources

- [Berkley Information Security and Policy - Best Practices & How-To Articles](#)

## Optional Literature Recommendations

- Andress: The Basics of Information Security (2nd Edition), 2014
- Shostack: Threat Modeling: Designing for Security, 2014
- Paar/Pelzl: Understanding Cryptography: A Textbook for Students and Practitioners, 2010
  - [Introduction to Cryptography by Christof Paar](#) (24 recorded lectures)

## Prerequisites @ Angewandte Informatik (B.Sc.)

|  |      |                                  |      |
|--|------|----------------------------------|------|
| Information & Network Security         | S5   | Application Security & SDLC      | S6   |
| Diskrete Mathematik 2                  | S2   | Datenbanksysteme                 | S2+3 |
| Technische Grundlagen der Informatik 2 | S3+4 | Praxis der Softwareentwicklung   | S3+4 |
| Gestaltung von Informationssystemen    | S3+4 | Softwarequalitaet                | S4   |
| IT-Organisation und Projektmanagement  | S3+4 | Software Engineering             | S5+6 |
| Informatik und Gesellschaft            | S1   | Internet Anwendungsarchitekturen | S5+6 |